CITY OF LODI

COUNCIL COMMUNICATION

AGENDA TITLE: Specifications and Advertisement for Bids for a 1750 G.P.M. Class A Custom Fire Apparatus

MEETING DATE: July 17, 1996

PREPARED BY: Interim Fire Chief

RECOMMENDED ACTION: That the City Council approve the specifications and authorize the advertising for bids for a 1750 GPM Class A Custom Fire Apparatus to be used by the fire department suppression division.

BACKGROUND INFORMATION: This is the acquisition phase of a capital budget request approved in the 1995-97 budget for the replacement of a current fire department front line apparatus. The purpose for this purchase is necessary because of the lack of reliability and extended service life of the existing apparatus currently on front line. The industry standard for service life as front line apparatus is considered to be 12-15 years with an additional five years in reserve status. Approval of this request will result in the replacement of a 1969 Van Pelt fire apparatus. Delivery date is expected to be within twelve months of the bid award. The specifications were developed by an internal committee consisting of fire personnel headed by Captain Doug Hintz. The specification document was also reviewed by the City Purchasing Agent and the City Attorney.

DISPOSITION: The 1969 Van Pelt will be advertised for sale with the proceeds used for equipment purchases for the existing fleet.

FUNDING: The expected purchase price of $246,500.00 will come from a combination of the City equipment fund and the general fund. The City has the discretion to pursue lease purchase and/or finance options.

BID OPENING: August 1, 1996

Frank Ortiz, Interim Fire Chief

APPROVED: _____
H. Dixon Flynn -- City Manager

CITY OF LODI FIRE DEPARTMENT
FIRE APPARATUS SPECIFICATIONS
1750 GPM PUMPER

GENERAL SCOPE OF THE BID:

The Lodi Fire Department is seeking bids from qualified contractors to manufacture and deliver a 1750 GPM Class "A" custom fire apparatus.

This is an "Engineer, Design, Construct, and Delivery" type specification and it is not the intention of the City of Lodi to write out vendors or manufacturers of similar or equal equipment of the type specified. Bids or alternate bids for any equipment that will efficiently accomplish the same task will be given careful consideration. City of Lodi shall be the sole judge of equipment that is the most advantageous and the decision of the City shall be final.

Attached is an example of the type of unit and the typical components desired on the unit. This example is taken from national manufacturers whose equipment is acceptable to the Department. It is the intent of the proposal that the contractor provide the best overall apparatus meeting the needs of the Lodi Fire Department at the best price.

The Department is aware that different manufacturers use different processes, materials and components when building apparatus. Therefore, it is the responsibility of the manufacturer to provide the specifications and justification for other than the listed specifications attached with each bid.

Each proposal shall be accompanied by a set of "Contractor's Specifications" consisting of a detailed description of the apparatus and equipment proposed and to which the apparatus furnished under contract, must conform. These specifications shall indicate size, type, model, and make of all components, parts and equipment. **NO EXCEPTIONS.**

The successful contractor will not be allowed to take advantage of any error or omission in the specifications or in the "Contractor's Specifications". Full instructions will always be given when such error or omission is discovered and the Lodi Fire Department representative is notified concerning such error or omission. Contractor shall immediately notify the Lodi Fire Department in writing when any such error or ommission is discovered.

The ability of the bidder to properly execute the contract to specification and to deliver the apparatus within 365 days from receipt of order shall be deemed major considerations when evaluating each bid.

BIDDERS RESPONSIBILITY AND QUALIFICATIONS:

Bidders shall have in operation a factory adequate for and devoted to the manufacture of the fire equipment herein specified. If equipment is proposed other than of his/her own manufacture, he/she will provide with the bid a written statement that such equipment offered is in compliance with this specification. The intent of this section is to ensure single source responsibility for all equipment proposed by the bidder.

A list of Fire Departments with contact names and telephone numbers to which the bidder has sold similar or identical equipment within the last three years shall be supplied with each bid.

Each bid shall disclose any pending or anticipated litigation between the bidder and sub-contractors, other parties and the bidder or other parties and the sub-contractors.

The bidder shall submit a list of designated warranty and repair facilities, for diesel engines, transmission, and electrical systems, within a 50 mile radius of the City of Lodi.

EXAMINATION OF SPECIFICATIONS:

Each bidder is required, before submitting their bid, to be thoroughly familiar with the specifications contained herein. No additional allowances will be made because of lack of knowledge of these conditions. It is the responsibility of the successful bidder to ascertain if any component(s) of the specification are unsafe or do(es) not meet or exceed all applicable state and federal standards.

If any unsafe or poorly designed criteria are contained herein, they shall be thoroughly explained to the purchaser in the bid by noting exception or exclusion. The City of Lodi will be advised, and exemption/exclusion noted within the bid. This item may be negotiated or renegotiated during the period of manufacturing.

The manufacturer's labor contracts, if up for renewal, shall be noted with the expiration date of the contract and anticipated outcomes.

PRICES AND PAYMENTS:

All bid prices shall be on a F.O.B. destination, delivered, and accepted basis at 217 W. Elm St., Lodi, California, per specifications and shall include warranty. All prices must be specified on the Bid Form and shall be valid for at least ninety (90) days from the date of the bid opening.

Payment shall be made in accordance with the specifications and the bid upon acceptance by the City of the hardware and/or services performed under contract with the successful bid. All invoices shall bear the purchase order number.

PRICES AND PAYMENTS: (continued)

The City of Lodi plans to obtain finaning for this purchase. Bids are being solicited for the purchase price. The successful bid will be the basis for financing. The successful bidder will have the opportunity to bid for the financing of the equipment.

BID EVALUATION:

Bids received shall be evaluated by the Director of Finance, City of Lodi Fire Department and the City Manager's Office. This evaluation will be based as a minimum on the following criteria:

- Completeness of the bid, i.e., the degree to which it responds to all requirements and requests for information contained herein.
- Manufacturing and delivery schedule.
- Contractor's demonstrated capabilities and qualifications.
- Equipment supplier's demonstrated capabilities and qualifications.
- Technical approach, which includes design and engineering reliability factors.
- Maintainability considerations and recommendations.
- Planning documentation addressing: design and engineering data, drawing and schematic layouts.
- Logistical support, operation and maintenance and support functions.

These specifications are based upon design and performance criteria which have been developed by the City of Lodi Fire Department as a result of extensive research and careful analysis of the data. Consequently, these specifications reflect the only type of fire apparatus that is acceptable at this time. Therefore major exceptions to specifications will not be accepted. The specifications will note specific areas where no exceptions whatsoever will be accepted. Certain exceptions may be accepted if they are minor, equal, or superior to that which is specified, and provided that they are entitled "Exceptions to Specifications". The exceptions shall refer to the specification page and paragraph number where the excepted specification may be found. The City of Lodi shall determine which (if any) exceptions are acceptable and this determination shall be final. Bids that do not comply with the prescribed method to take exceptions may be rejected without further consideration.

CONTRACT AWARD:

The City of Lodi reserves the right to reject any or all bids including those bids deemed to be unresponsive and to accept any bid which best meets the above evaluation criteria. The City also reserves the right to waive any informalities and technicalities in procedure. The City of Lodi reserves the right, before awarding the contract, to require a bidder to submit such evidence of his qualifications as it may deem necessary. Documentation that may be required include financial, technical, and other documents that may be relevant to the evaluation of the qualifications and abilities of the bidder. Bidder may also be evaluated based on past performance including past performance (experience) with the City of Lodi. The City of Lodi shall be the sole authority in the award of bids.

DISPUTES:

In case of any doubt or difference of opinion as to the items to be furnished herein, the decision of the City Manager shall be final and binding on both parties. It is understood that the venue for any legal action that may be brought by either party arising out of any contract executed pursuant to these specifications shall be the appropriate jurisdictional court of San Joaquin County, California. These specifications and any contract executed pursuant to these specifications shall be interpreted under the laws of the State of California.

PENALTIES:

If the successful bidder fails to deliver the equipment or perform the services within the time specified, it is understood and the successful bidder hereby agrees, that the amount of $100.00 per unit per calendar day to a maximum of $10,000 per apparatus may be deducted from the moneys due the contractor for each intervening calendar day any work remains incomplete.

The successful bidder shall not be liable if performance failure arises out of causes beyond the control and without the fault or negligence of the successful bidder (acts of God, war, fires, floods, freight embargoes, etc.). Should a performance failure occur, it will be the responsibility of the successful bidder to notify the City of Lodi of circumstances for non-performance. Immediately following the resolution of circumstance responsible for non-performance, the successful bidder must re-negotiate delivery schedules.

PRE-AWARD CLARIFICATIONS:

In the event a clarification is requested on the contents of this specification, the question shall be addressed in writing to: Frank Ortiz, Acting Fire Chief, City of Lodi Fire Department, 217 W. Elm St., Lodi, CA 95240.

Clarifications or corrections to the specifications shall not be valid unless they are in written form and signed be the Fire Department Chief or his designee. When a manufacturer requests a clarification, a copy of the request and City of Lodi reply will be forwarded to all bidders. No clarifications or addendum will be issued within 24 hours of the scheduled bid opening.

PRE-CONSTRUCTION CONFERENCE:

The successful bidder shall be required, prior to manufacturing, to have a pre-construction conference at the site of his choosing with City of Lodi Fire Department Chief to finalize all the construction details. If the bidder requires the conference to be held at a location other than the City of Lodi, the bidder shall, at his/her expense, provide transportation, lodging, and meals, etc., for two (2) persons designated by the City of Lodi. The pre-construction conference shall not be considered as a site visit as further required by these specifications. As part of the pre-construction conference an electrical system analysis shall be performed and the results provided to the Fire Department.

INDEMNIFICATION AND INSURANCE:

The successful bidder shall indemnify and save the City of Lodi, its officers, agents and employees harmless from any and all claims, liability, losses, and causes of action which may arise out of the fulfillment of these specifications and any agreement executed for the performance of the acts called for in these specifications. The successful bidder shall pay all claims and losses of any nature whatever in connection therewith, and shall defend all suits, in the name of the City of Lodi, its officers, agents and employees, when applicable, and shall pay all costs and judgments which may ensue thereafter.

PATENTS AND ROYALTIES:

The bid, without exception, shall indemnify and save harmless the City of Lodi, its officers, agents and employees from liability of any nature or kind, including cost and expenses for or on account of any copyrighted, patented or unpatented invention, process or article of manufacture or used in the performance of the contract, including its use by the City of Lodi. If the manufacturer uses any design, device, or materials covered by letters, patent, or copyright, it is mutually agreed and understood without exception that the bid prices shall include all royalties or cost arising from the use of such design, device or materials in any way involved in the work.

PROGRAM MANAGER:

The successful bidder shall designate a competent individual acceptable to the City of Lodi to perform the successful bidder's program management function. The Program Manager shall provide a single point interface between the City of Lodi and the successful bidder on all matters concerning the contract. The Program Manager shall provide a written monthly status report to the Fire Chief, or his designee, on the progress of the fabrication, delivery schedules and all existing potential problems.

SUB-CONTRACTS:

Nothing contained in the specifications shall be construed as creating any contractual relationship between any sub-contractor and the City of Lodi. The successful bidder shall be fully responsible to the City of Lodi for the acts and omissions of the sub-contractor(s).

FAMILIARITY WITH LAWS:

The bidder is presumed to be familiar with all federal, state, and local laws, ordinances, codes, rules and regulations that may in any way affect the work. Ignorance on the part of the bidder shall in no way relieve him/her from responsibility. All bidders must have licenses as required by California State Law and be prepared to submit copies of them upon request.

GENERAL CONSTRUCTION:

The apparatus, at time of delivery, must fully comply with all Federal Motor Vehicle Standards, State of California Motor Vehicle regulations in effect at time of manufacture, and NFPA Standards #1901 and other related standards of the National Fire Protection Association covering Fire Apparatus.

The construction shall be substantial and safety factors considered to carry loads as specified and to meet road and speed conditions as set forth under road requirements. Welding shall not be employed in the assembly of the apparatus in any manner that will prevent the ready removal of any component part for servicing or repair.

SPECIFICATIONS PROPOSAL REQUIREMENTS:

Each bidder must indicate in a "Yes/No" column if their proposal complies on each item specified. Exceptions may be allowed, unless **"NO EXCEPTIONS"** is stated, if they are equal to or superior to that specified and provided they are listed and fully explained on a separate page. We must be able to study, evaluate and compare exceptions noted. Exceptions to specifications will be referenced to the item number, and a drawing, photograph, or technical information about the exception will be included. There will be no deviations to this requirement. **PROPOSALS TAKING TOTAL EXCEPTIONS TO SPECIFICATIONS WILL NOT BE ACCEPTED.**

REQUIRED MANUALS:

The successful bidder shall supply, at time of delivery, complete operation and maintenance manuals covering the completed apparatus as delivered. A permanent plate must be mounted in the driver's compartment specifying the quantity and type of fluids required including engine oil, water, transmission fluid, pump transmission, lubrication fluid, pump primer fluid and drive axle lubrication fluid.
The following manuals and charts shall be provided. **VEHICLE WILL NOT BE ACCEPTED WITHOUT THESE MANUALS.**

- Two (2) Parts Manual
- Two (2) Service Manuals
- Two (2) Operators Manuals
- Two (2) Detailed wiring diagrams
- Two (2) Detailed Lubrication Charts

BLUEPRINTS

A blueprint must be approved by the fire department prior to any metal being sheared or commencement of apparatus construction. The fire department, the successful bidder's representative and the apparatus manufacturer shall each have a copy of this blueprint. This blueprint shall then become a part of and incorporated into the total contract. Drawing must show, but are not limited to, such items as the chassis being utilized, lights, horns, sirens, all compartment locations and dimensions, special discharges, etc. Blueprint is to be a visual interpretation of the unit as it is to be supplied.

ON SITE INSPECTIONS:

Included in the bid shall be provisions for two (2) onsite inspections with two (2) members of the Lodi Fire Department present for each inspection. The successful bidder shall pay all travel, lodging and meal expenses for the City of Lodi Fire Department representatives performing the on-site inspections. The time of these inspections shall be determined at the pre-construction conference.

DELIVERY METHOD:

The apparatus shall be bid F.O.B. Lodi, CA. Acceptance testing of the apparatus shall be conducted within 72 hours after receipt of the completed apparatus. Successful bidder's representative shall provide a minimum of one (1) day training on the operation of the apparatus within one week of delivery. The cost of said training is to be included in the bid. The contractor shall furnish copies of the pump manufacturer's record of pumper construction details when delivered.

PERFORMANCE TEST AND REQUIREMENTS:

All apparatus, at the time of delivery, shall conform to the minimum requirements of the latest standards for fire apparatus, plus any performance and design criteria or additional equipment that has been specified herein. Apparatus shall also comply with the National Fire Protection Association Pamphlets 1900 and 1901.

Apparatus brake system shall conform to the minimum requirements of the Federal Motor Vehicle Safety Standards (FMVSS-1211).

All apparatus shall conform to any other Federal Motor Vehicle Standards that apply to automotive fire apparatus, State of California regulations, Occupational Safety and Health Administration (OSHA) Standards that apply to the apparatus and the auxiliary equipment and/or related fire fighting equipment that is furnished.

PERFORMANCE TEST AND REQUIREMENTS: (continued)

A road test will be conducted with the apparatus fully loaded and a continuous run of fifty (50) miles or more will be made under all driving conditions, during which time the apparatus shall show no loss of power or overheating. The transmission drive shaft or shafts and rear axles shall run quietly and be free from abnormal vibration or noise throughout the operating range of the apparatus.

The service brakes shall be capable of stopping a fully loaded vehicle in 30 feet at 20 MPH on level concrete highway.

FAILURE TO MEET TESTS:

In the event the apparatus fails to meet the test requirements of these specifications on the first trials, second trials may be made at the option of the successful bidder within thirty (30) days of the date of the first trials: such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. Failure to comply with changes as the City of Lodi may consider necessary within thirty (30) days after notice is given to the successful bidder of such changes shall also be cause of rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the City of Lodi or its use by the fire department during the above specified period with the permission of the successful bidder shall not constitute acceptance.

WARRANTY:

The Successful bidder shall provide an unconditional apparatus warranty to cover defects in the material and workmanship for a period of one (1) year from the date of formal acceptance by the City. The successful bidder agrees to repair or replace any defect which may be found by the City, or failure which may occur during the warranty period which is not normal wear and tear, obvious neglect or abuse by the City which causes defect or failure, and any damage directly attributed to collision. Defects in material and workmanship shall be documented by the City and notice of said out of service time given in writing to the successful bidder.

The successful bidder shall extend the warranty period from the date of expiration equal to the out of service time duly noticed by the City prior to expiration of the warranty.

Any part or component repaired or replaced during the warranty period shall carry extended warranty time for a period of one (1) year from the last date of replacement or repair by the successful bidder.

Where a component manufacturer provides an independent warranty which exceeds the twelve (12) month period, the provision of this warranty shall not be allowed to diminish the normal warranty that is provided by any component manufacturer.

WARRANTY: (continued)

Where a component manufacturer does not provide a warranty equal in time or which does not fully cover all costs involved, the successful bidder is solely responsible for bearing any additional costs, or, if necessary, the total costs including freight, parts, components, materials, and/or labor for removal and installation, contractual repair or replacement service and the reimbursement for salaries of all City of Lodi employees that are engaged in performing warranty work at the request
of the successful bidder. Reimbursement for the City of Lodi salaries shall be provided under the following circumstances, which shall be a requirement of this warranty agreement.

Within seventy-two (72) hours after receipt of a verbal or written notification by the City of Lodi Fire Chief, or his designee, that warranty service is required, the successful bidder shall respond verbally, and immediately follow up by letter to the City of Lodi with a statement of intent to show where and when the warranty service shall be accomplished. In the event that there is no response or if the response exceeds seventy-two (72) hours, or if the response that is received is on time but is not acceptable to the Fire Chief of the Lodi Fire Department, the City of Lodi Fire Department will provide for the required warranty service and the total costs of all labor, parts, components, materials, and freight shall be reimbursed to the City of Lodi by the successful bidder and within fifteen (I5) calendar days after the bill has been mailed to the successful bidder.

Warranty shall begin at acceptance of the manufacturer's apparatus by the City of Lodi

The duration of the warranty period shall be stated by the Bidder with his bid response and shall be at least:

- One (1) year - parts, labor, and all components on cab and chassis.
- Three (3) years - Extended warranty for engine and transmission.
- Seven (7) years - Rust and corrosion to body.
- Twenty-five (25) years - Water tank and piping.
- Lifetime- Frame

The aforementioned warranty periods constitute the minimum and consideration shall be given to those offering extended warranty packages.

MATERIAL AND WORKMANSHIP:

All equipment furnished shall be guaranteed to be new and of current manufacture, meet all requirements of this specification, and be in an operable condition at the time of delivery.

All parts shall be of high quality workmanship, shall be in production at the time of bid, and no part or attachment shall be submitted or applied contrary to the manufacturer's recommendations and standard practices.

All workmanship shall be of high quality and performed in a professional manner so as to insure a safe and functional apparatus with an aesthetic appearance.

LEASE/PURCHASE OPTIONS:

It is the intent of the Lodi Fire Department to Lease-Purchase this apparatus. Bidder's Lease-Purchase options are to be included with the bid.

SPECIFICATIONS

A - CHASSIS/CAB:

A-1. The cab shall be of Eurospace design, Metro Star SFD 4 door with Gladiator exterior trim. There shall be no rear window glass except for in the rear doors.

A-2. The cab shall have available seating space for 6 firefighters but will be equipped with only 4 seats. The drivers seat shall be a 4 way adjustable. The officer's seat will be at least 2 way adjustable and will have provision for MSA SCBA pack. The two rear facing seats will have provision for MSA SCBA packs and shall be mounted 11" from the cab side wall. All SCBA seats shall have pillow inserts.

A-3. Cab length must be a minimum of 110". Cab height from floor to ceiling in the crew area must be a minimum of 55".

A-4. Entire cab must tilt to 45 degrees for power train access. Tilt actuation shall be electric over hydraulic. Each hydraulic cylinder will have an attached hydraulic locking mechanism, in the event of a hydraulic failure. A mechanical cylinder stay bar and release will be provided to insure a positive lock in the tilted position. A rear cab lock with indicator light will be provided when the cab is lowered.

A-5. Cab windows shall be tinted with roll down windows in the front and vertical sliding windows in the crew seat area and the rear doors. Direction of window opening to be from front to rear.

A-6. Construction material to be either 12 gauge cold rolled, Galvanneal steel, stainless steel or aluminum.

A-7. Crew cab entrance doors will be located at the rear of the cab and exit onto a 32" walkway. Cab doors will be a minimum of 22" wide . Outside door handles shall be Bend D ring type.

A-8. Walkway between rear of cab and front of body will be constructed of a minimum of 3/16" aluminum diamond plate, an intermediate step will be furnished on each side of the walkway to keep the step distance approximately 10" down to the running board.

A-9 . Windshield wipers to be individual electric wipers that meet or exceed the FMVSS requirements. Each wiper will be furnished with a windshield washer that is actuated by the wiper controls.

A-10. Wheel base length to be 189". Wall to wall turning radius shall not be more than 33'.

A-11. Cab floor and engine cover must be provided with heavy duty sound barrier material and reinforced pebble wear surface floor mat to provide maximum sound deadening and durability.

A - CHASSIS/CAB (continued)

A-12. Dash controls shall consist of the following:

Automatic circuit breaker switches for all controls plus 4 spares (see section "M-7").
Dual air pressure gauges
Red dual low air pressure warning lights
Dual low air pressure audible indicator
Red low oil pressure warning light with audible indicator.
Transmission temperature gauge with warning light and alarm.
Voltmeter
Ammeter
Fuel gauge
Red high water temperature warning light with audible indicator.
Two green directional signal indicator lights
Blue high beam headlight indicator light
Speedometer
Tachometer
Low voltage warning lamp with audible alarm
Air restriction indicator
Ignition switch
Push type engine starter button
Engine shutdown switch
Parking brake control valve
Parking brake actuated red warning light.
Pump/Road transmission shift valve with indicator light
Open compartment indicator light.(rotating 4")
Hour meter
Emergency brake release valve
Indicator light for rear flood lights
Air conditioner controls
Heater/defroster controls
Manual throttle control
4 way flasher control
Provision for sufficient switches in one panel with master disconnect to control all warning devices. (See section "M-9" sequenser)
Headlight switch to be independent of master control but be overridden by master control

Location of above to be discussed at pre-construction conference.

B - FRAME:

B-1. Side rail shall be channel type heat treated steel, 10 1/4" x 3 1/2" x 3/8". Yield strength to be 110,000 psi.. and RBM no less than 1,915,000 inch lb. with lifetime warranty.

B-2. There shall be 7 gussetted cross members. Assembly shall be by bolted design using a grade 8 flanged bolts and flanged lock nuts.

B - FRAME (continued)

B-3. Heavy duty painted, bottom mounted, tow hooks with safety closures, must be attached to the chassis frame; 2 under the front bumper and 2 under the rear bumper.

B-4. A single rear tow eye of sufficient rating to pull the unit shall be provided, bolted, to the sub frame with grade 8 bolts and a minimum eye opening of 2" x 3".

C - AXLES:

C-1. Front axle shall be Rockwell FL series 16,540 lb. capacity. Super duty 3 1/4" diameter double acting hydraulic shock absorbers must be installed.

C-2. Rear axle shall be Rockwell Model RS 24160 single reduction type with 24,000 lb. capacity, gear ratio to be engineered to allow an approximate top speed of 60 mph.

C-3. Axle bearings, front and rear, to be oil lubricated.

C-4. The Rockwell International 5 year axle warranty will be provided with the apparatus.

D - SUSPENSION:

D-1. Front suspension springs shall be compatible with the axle rating and loads to be carried.

D-2. Rear suspension springs shall be compatible with the axle rating and loads to be carried.

E - BRAKES:

E-1. Brake system must be full air, dual system, with quick build up capability. Compressor shall be 21 CFM capacity and reservoir capacity shall be no less than 4200 cu. inches.

E-2. Air lines to be reinforced nylon tubing, color coded, wrapped in a heat resistant loom.

E-3. The service brake systems shall be Rockwell-standard 'S' cam type disc with automatic slack adjusters front and rear.

E-4. The parking brake shall meet or exceed minimum requirements.

E-5. Braking system must comply with State and Federal Dot Requirements. No exceptions.

E-6. Bendix AD-9 air dryer shall be provided with heated moisture ejector and manual drains on all tanks.

F - ENGINE

F-1. Shall be Cummins Diesel Model 6CTA 8.3. Engine shall deliver 325 HP @ 2200 RPM and 820 lb. of torque @ 1300 RPM and shall be equipped with exhaust brake.

F-2. An engine block heater will be provided with 110 volts ac 20 amp Kussmaul auto-eject system placed on the left side of pump plate area. (see section "M-4")

G - COOLING SYSTEM

G-1. Cooling system must be of sufficient size to keep engine properly cooled under all conditions of road and pumping operations.

G-2. All hoses shall be silicone with constant torque fittings.

G-3. Drain cocks will be furnished at the lowest point in the radiator system.

G-4. Water filter will be provided in the system

G-5. The radiator will be of the bolted type with removable upper and lower tanks with full de-aeration system.

G-6. A transmission oil cooler shall be provided compatible for the World transmission.

G-7. After delivery in California the system will be filled with distilled water and RMI 25 water treatment additive. No Anti- Freeze.

H - EXHAUST SYSTEM

H-1. Exhaust system will be installed under the frame with outlet to the right side terminating with a 45 degree turn down chromed outlet ahead of the rear wheels.

H-2. Muffler shall be aluminized heavy duty type.

H-3. Material use in system must be minimum .065" wall thickness aluminized steel tubing and stainless steel flex.

H-4. Heat shields will be installed where necessary.

I - AIR CLEANER

I-1. Shall be dry type with ember separator and be easily accessible for service.

I-2. Air restriction indicators shall be provided in the cab dash and on the pump panel.

J - DRIVE TRAIN

J-1. Drive lines shall be heavy duty metal tube and be equipped with Spicer 1700 series universal joints. The shafts will be dynamically balanced before installation and have glide coat, splined slip joints.

J-2. Transmission will be a 6 speed Allison WORLD transmission MD 3060P with pump lockup in direct drive gear. The lockup will engage with the pump shift control located inside the cab.

J-3. Transmission will have a dipstick and fill tube easily accessible.

J-4. Transmission will have auxiliary cooling to the radiator unit.

K - STEERING

K-1. Ross TAS-85 integral heavy duty power steering will be provided with a Vickers V20F hydraulic pump with integral pressure and flow control. The steering wheel will be padded and 20" in diameter.

K-2. The steering column will be a tilt and telescopic type.

L - TIRES & WHEELS

L-1. Wheels and tires will be:
Front - 315/80R 22.5 20 ply "L" tubeless radial, G291 highway tread Goodyear or equal, with 22.5 x 9.0 10 stud disc wheels. Tires and wheels shall be rated at 18,000 lb..
Rear - 11r-22.5 16 ply "H" tubeless radials, G159A highway tread Goodyear or equal, with 22.5 x.8.25 10 stud disc wheels. Tires and wheels shall be rated at 24,820 lb..

L-2. Wheels will be finished painted the same color as the vehicle.

M - ELECTRICAL SYSTEM

M-1. The alternator shall be a Niehoff or Leece\Neville with an output of at least 240 amps or 290 amp if available.

M-2. The batteries shall be 12 volt. There shall be 2 sets of 3 'group 31' batteries (6 total). Each set shall supply at least 1550 cca with a reserve capacity that shall be:
ALL of the emergency lights shall be activated and run for 10 minutes WITHOUT the apparatus engine running or any external assistance. After 10 minutes the unit shall be started without any external assistance.

N - LIGHTING SYSTEMS (continued)

N-9. A 4" red flashing or rotating "Door Open" light mounted in the cab in clear view of the driver shall be provided.

N-10. Perimeter scene lighting shall be mounted 2 under the front bumper, 2 under the rear step and 2 each under the running board on each side of the apparatus shall be provided. These shall be controlled by means of a switch at the pump panel and 1 at the cab dash.

N-11. A pump compartment light and switch shall be provided inside the pump compartment, accessed through the side pump access panels.

N-12. 2 work lights mounted at the rear of the hosebed shall be provided. These shall controlled by a switch at the cab dashboard and shall be a halogen flood type.

N-13. 2 Perlux model 600RM fog lamps shall be mounted in the front bumper. A switch and indicator light shall be provided on the cab dashboard.

N-14. 2 Questar Model QS-1 roof mounted spot lights shall be installed. Both units shall be installed as far to the outside of the roof to minimize interference with the lightbar while still providing full rotation. These shall also be installed for easy use by the forward facing personnel.

N-15. Intersection strobe lights will be located on the front outside corners of the extended bumper and above the rear wheel well area.

N-16. A Federal model FHL2 ,or equivalent, headlight flasher unit shall be installed and controlled by a cab mounted switch. These lights shall also be canceled upon activation of the high beams.

N-17. 2 alternating flashing red lights shall be provided on the cab front below the windshield level in accordance with NFPA standards. (see also N-3).

N-18. 2 chrome framed flood/work lights will be mounted on the rear of the cab facing the pump operators panel.

N-19. 2 lights shall be provided with switches at the rear tailboard to light up the step.

N-20. A 64" Tomar series 930 lightbar shall be mounted on the cab roof. This shall have two solid burning forward facing red lights, two rear facing flashing amber lights along with two forward facing and two rear facing red strobe lights. It shall have a strobe at each corner red in color. This shall also contain two "alley" lights. The four strobes visible from the front shall be powered by a Tomar "PRE" power supply to activate a 3M opticom traffic pre-emptor. The speed of the Tomar power supply shall be switchable from the cab.

N-21. A Federal Signal Master, or equivalent , traffic advisor light shall be provided. It shall be mounted at the highest possible location at the rear of the apparatus. This shall be recessed or protected in some manner from damage and shall be controlled by a cab mounted control head.

N - LIGHTING SYSTEMS (continued)

N-22. 1 Tomar model Rect-37hwb-a/c and 1 model Rect-37hwb-r/c light shall be flush mounted on the rear of the vehicle. One light shall be mounted on each side. The clear lights shall activate whenever the vehicle is placed in reverse. The red and amber shall flash. The color lights shall be activated from a cab mounted switch.

N-23. Two 120 volt 500 watt telescoping pole Quartz flood lights shall be mounted just to the rear of the pump operators panel. Each light shall extend a minimum of 40" and allow for 360 degrees of rotation. Locking castings shall be tightened by means of a hand wheel. Quality shall be Churchville or better.

O - PUMP

O-1. The pump will be a single stage 1750 gpm at 150 psi. . The pump will be a Hale QSMG -150 with ceramic automatic adjusting pump seal.. No Exceptions. The pump shall be cast, manufactured and tested at the pump manufacturers factory and shall meet all NFPA Standards.

O-2. The priming pump shall be a positive displacement vane type electrically driven and conform to standards outlined in NFPA pamphlet #1901. It shall be of the pump manufactures design. One switch shall operate the priming valve and the priming motor and be located on the pump panel. A priming oil reservoir tank of minimum capacity of 1 gallon shall be installed. The tank shall be properly vented and have a dip stick and access door for ease of checking and filling.

O-3. Pump manufacturers relief valve will be installed on the suction side of the pump preset to 55 psi.. The outlet will terminate below the left side running board visible to the pump operator.

O-4. An automatic pressure control relief valve shall be provided by the manufacturer of the fire pump. Relief valve shall be equipped with a hand wheel control and indicator pilot light. The relief valve shall be capable of handling the full rated capacity of the pump with a surge not to exceed 20 psi..

O-5. The pump will be tested, approved, and certified by Underwriters Laboratory testing agency at the manufacturer's expense. Lodi Fire Department to observe test.

O-6. A heat exchanger manufactured by the pump manufacturer shall be provided and installed within 10" of the radiator inlet. The control valve shall be located at the pump operators position.

O-7. Thermal relief valve system shall be provided to re-circulate pump water during periods of low water movement.

O-8. A FoamPro 2002 will be provided and mounted at the pump panel.

P - VALVES AND PLUMBING

P-1. Discharge valves shall be 1/4 turn full flow valves manufactured by Akron Brass. All 2 1/2" or larger valves shall have individual 3/4" drain valves located at each outlet and plumbed to dump below the running boards. Drains shall be provided for livelines.

P-2. Total of 6 - 2 1/2" outlets, 4 with 21/2" plumbing. 2 located at each side of the rear of vehicle below the hose bed and spaced in to provide for fittings and wyed adapters, with 30 degree drop snoots. 2 on each side of the pump panels with 30 degree drop snoots. 1 outlet on each side of the pump panel is to have 3" piping and valve with a 2 1/2" outlet. Outlets to be NST male with chrome plated caps and beaded chain attached to the panels. Droop snoots where possible shall be integral part of the valve.

P-3. 1 - 5" Storz outlet with 30 degree drop snoot Storz coupling to be compatible with our Angus 5" hose and Storz fittings, located on the drivers side of the pump panels. Plumbing to be 3", valve to be 3". chained caps to be provided attached to the outlets.

P-4. All 3" and larger valves will be equipped with slow-cloz devices as per NFPA standards.

P-5. Valves to the 2 speed lay compartments shall be 2", 1/4 turn, full flow ball valves, operated from the pump panel, 2" piping and 1 1/2" NST male outlets attached to Chiksan swivels.

P-6. There will be a 1 1/2" gated outlet with swivel elbow piped to the drivers side corner of the front bumper extension. Plumbing will be a minimum of 2" with a 1/4 turn full flow valve controlled at the pump operators panel.

P-7. There will be a single Hannay reel assembly of 200' of 1" line mounted on the top behind the pump panel. 1 1/2" piping with proper fittings shall connect this to the pump. A foot operated rewind switch shall be provided. Location to be determined at pre-construction conference.

P-8. There will be 3" piping to the deluge riser above the pump area which will be centrally located close to the front of the storage well in such a manner that a TFT CrossFire monitor with an 18" Extend-a-Gun can be operated by the pump operator. Valve to be 3" - 1/4 turn full flow slow cloz ball valve.

P-9. An electric actuated 6" butterfly valve shall be installed on both sides of the pump panel intake. The valves shall be installed behind the pump panel. The intakes shall have 5" Storz fitting with 30 degree drop.

P-10. Tank to pump plumbing will be a minimum of 3" with electric control valve with open - close indicators lights and with immediate manual override capabilities. A check valve will be provided in the tank to pump line to prevent the possibility of back filling the tank.

P-11. 1 tank refill line of heavy duty aeroquip hose with a 1 1/2", 1/4 turn full flow valve shall be provided.

P - VALVES AND PLUMBING (continued)

P-12. 2 - 2 1/2" suction valves shall be provided, one on each side of the pump compartment.

Q - PUMP OPERATOR'S PANEL

Q-1. Pump operators panel shall be located behind the cab and top mounted. The gauges and controls mounted on the operator panel shall be located for operator convenience and shall be illuminated with 2 incandescent 3 bulb lights with on/off switches for night operation. All gauges and controls shall be clearly identified with color coded marker plates. The pump operator panel shall be stainless steel, brushed satin finish to reduce glare.

Q-2. The following shall be provided. Pressure gauges shall be span, silicone filled. No exceptions.

1 -Voltmeter
1 - Ammeter
1 - Audible low voltage alarm with warning light
1 - Tachometer, electric
1 - Engine oil pressure gauge
1 - Engine water temperature gauge
1 - Pump hour meter
1 - Pump pressure gauge, 0-600psi., 4 1/2" diameter
1 - Pump compound gauge, 30-0-600 psi., 4 1/2" diameter
9 - Pressure gauges, 0-400 psi.. One for each 1 1/2", 2 1/2" and 5" discharge outlets
1 - Electric water level gauge
1 - Air restriction gauge
1- Throttle control

Q-3. The following controls shall be mounted on the pump operators panel:

4 - Discharge gate controls for the 2 1/2" outlets
2 - Discharge gate controls for the 3" to 5" Storz outlet
3 - Discharge gate controls, quarter turn full flow for 1 1/2" lines
1 - Relief valve control
1 - Tank to pump control valve
1 - Tank refill control valve
1 - Set of Underwriters test gauge connections
1 - Indirect cooling control valve
2 - 6" suction valve, electric or air controlled, with open/close indicator lights
1 - priming pump control, push button, electric
1 - RPM 1/10th speed outlet counter
1 - Master pump drain
1 - Manual throttle control

Q-4. A microphone and speaker compartment will be furnished adjacent to the pump operators panel. Compartment size to be 11" x 9" x 6.5".

R - TANK

R-1. Apparatus shall come equipped with 500 gal. water tank and a 20 gal. class A foam tank.

R-2. The foam tank shall be a UPF Poly tank.

R-3. The 500 gallon tank shall be fabricated entirely of ten (10) gauge steel.

R-4. All tank welds shall be welded inside and outside.

R-5. Baffles shall be installed both length wise and cross wise with stainless steel self locking bolts.

R-6. Tank covers shall allow 100% access to the tank. Cover shall be bolted with stainless steel self locking bolts with 2" gasket between cover and tank. Bolts to be outside the tank through an outside flange.

R-7. The tank shall be a "T" design to allow for a minimum of 24" deep lower side compartments.

R-8. The tank shall have a combination surge tower, manual fill, and overflow located at the left front of the hose bed. Manual tank fill to be at least 6" in diameter with removable screen. Overflow must be 4" in diameter and dump behind the rear axles (no water to dump on axle housing).

R-9. Tank shall be unconditionally guaranteed to the original owner for the life of the apparatus or 25 years excluding major vehicle accidents affecting the tank area.

R-10. Tank will be securely mounted to chassis frame utilizing 3" steel channel supports and spring loaded bolts to protect tank from road stress.

R-11 . Tank shall be equipped with a deep suction sump fitted with a 3" drain plug. A minimum 5" shall be maintained between the bottom of the sump and the outlet to the pump.

R-12. Poly tanks meeting design specifications will be accepted.

S - APPARATUS BODY CONSTRUCTION

S-1. Body must be constructed in accordance with NFPA Pamphlet 1901 recommendations. All welds and metal work will be free of sharp edges, objects or corners.

S-2. The sub frame shall be high tensile strength tubular steel 4" x 3" with .190" wall, and structural steel channel 4" wide, flange width 1.721" and a web thickness of .321". Steel tubing and channel shall be welded together forming a strong sub frame for the body. This sub frame shall be bolted to the chassis frame utilizing 1/2" grade 8 bolts not closer than 1 1/2" from the top or bottom frame flange.

S - APPARATUS BODY CONSTRUCTION(continued)

S-3. The apparatus body and separate pump console must be constructed of 12 gauge finished Galvanneal steel or equal strength aluminum. No exceptions.

S-4. All running boards, tail boards, shall be 3/16" aluminum diamond plate separated with 3/8" spooled spacers between component parts. They shall be properly supported by heavy duty brackets bolted to the chassis frame.

S-5. Body must be removable from chassis without cutting or bending. The major body component must consist of left and right body sides, rear facing body compartment and pump console.

S-6. Front bumper shall be 12" deep, 2 rib wrap around type extending 18" from the front of cab and be covered with 3/16" aluminum diamond plate. A recessed covered tray will be provided for 100' of pre-connected 1 3/4" hose with TFT nozzle.

S-7. Stainless steel fender liners will be installed in all wheel wells.

S-8. Stainless steel fender crown will be provided around front and rear wheel openings.

S-9. A rear intermediate step will be provided the width of the hose bed 10" deep to facilitate access to the hosebed.

T- COMPARTMENTS

T-1. All compartments must be of sweep out design, the floor higher than the compartment lip.

T-2. Each compartment must be provided with a minimum of two machine stamped louvers in rear wall.

T-3. All equipment doors shall have full length piano hinge of 3/16" diameter hinge pins.

T-4. All doors shall be double panel lap design with inner liners 1/8" thick of natural finish circular brushed aluminum.

T-5. All doors latches will be Hansen Model 459 with stainless steel offset D ring handles model 79L, or equivalent.

T-6. Horizontal hinged doors shall be provided with Henro Holder Springs or equivalent. Gas cylinder type holders not acceptable.

T-7. Vertical hinged doors will have Cleveland stainless steel double spring type holders.

T-8. All compartment doors will be provided with continuous high quality weather stripping to prevent moisture and dust from entering compartments.

T - COMPARTMENTS (continued)

T-9. Drip protection will be provided over all door openings by means of bright aluminum extrusion or formed aluminum treadplate.

T-10. Bright aluminum treadplate with 1" rolled edge shall be provided on the top of the compartments.

T-11. 4 wheel well air bottle compartments with rubber floor matting. Cast, hinged, brushed finished, aluminum doors.

T-12. Top horizontal hinged access door will be provided in each side pump panel to permit pump service access.

T-13. Compartment configuration as follows:

One compartment left & right sides, front of wheel - single door, 24" deep.
One compartment left & right sides, rear of wheel - single door, 24'' deep.
Two high side compartments left & right sides - single doors, 15" deep.
One locker compartment left and right sides rear - full height of side, single door, top section of cabinet 15" deep, bottom section 24" deep.
Rear compartment - double louvered doors - to accommodate a Honda 5000 watt generator vented to the outside with sufficient air flow.
One wide compartment at rear below hose bed - single drop down door.

T-14. All compartments shall have adjustable shelf brackets installed with one shelf per compartment except for rear.

T-15. Rear compartment to have slide out tray with a minimum of a 400 lb. rating.

T-16. Black compartment decking, petroleum distillate resistant, shall be installed in the compartment floors.

U - HANDRAILS

U-1. Handrails will be highly polished 1-1/4" diameter aluminum with rubber insert tubing. Locations as follows:

a. One half length rail on each side of rear .
b. One horizontal rail at rear of apparatus on each hose bed cover.
c. 1- 20" handrail at each cab door entrance.
d. One at each side of top mounted pump entry way.
e. A hand rail above each side of pump panel

V - HOSE BED

V-1. Hose bed capacity will be a minimum of 650' of 5" hose, 1350" 2 1/2" hose, 200' of 1 3/4" hose.

V-2. Hose bed ventilating rack shall be aluminum.

V - HOSE BED (continued)

V-3. Hose bed cover to be 3/16" thick aluminum diamond plate, bright finish, hinged with 1/4" stainless steel piano type hinges with positive lock to maintain open position. Front and rear ends to be broken down one inch for added strength, and must be reinforced and supported to allow a suitable walking surface. A hinged panel must be provided for access to the water tank fill tower with covers closed.

V-4. Hose bed cover will have a long backboard compartment on the underside of each cover.

V-5. 3 fully adjustable sliding track hose bed dividers of 1/4" reinforced aluminum, non painted, brushed finished, shall be provided in addition to the fixed center divider.

V-6. The right side of the hose bed shall have a compartment designed to hold the required ladders. 14' roof, 24' extension, 10' attic, & pike pole. Ladder trays shall be neoprene lined and have positive ladder locking device installed.

V-7. 2 speed lay hose beds will be provided under the pump panel area. These beds shall be capable of holding 250' of 1 3/4" hose with TFT nozzles and have aluminum ventilator racks. There will be drop down doors on the front of the cabinet for access to the hose for loading. Stainless steel rollers, horizontally and vertical shall be installed on each end of the speed lay compartments.

V-8. A tray shall provided in each side running boards capable of holding 25' of 5" hose.

V-9. 1 jump line compartment in the front bumper capable of holding 100' of 1 3/4 " hose and TFT nozzle with swiveled 1 1/2" outlet and hinged compartment lid.

W - AUDIBLE WARNING DEVICES

W-1. Grover model 1501 air horn to be recessed into front bumper and controlled by 2 switches in cab, one for engineer and captain.

W-2. Mechanical siren, Federal Model Q2B-P with horn switch control and right side floor switch, brake switch in center of dash. Siren to be mounted on top of front bumper.

W-3. Electric back up alarm as specified by Cal OSHA, NFPA Standards.

W-4. Tailboard to cab buzzer system with protected buttons on each side of rear.

X - FUEL SYSTEM

X-1. Fuel tank to be minimum 50 gallons.

X-2. Spin on primary fuel filter, water separator type to be provided.

X - FUEL SYSTEM (continued)

X-3. Filler neck compartment to have hinged door, raised front lip with drain hose behind panel to prevent overfill from spilling on outside of apparatus.

X-4. Only stainless steel wire braided fuel hoses will be acceptable.

Y - MISCELLANEOUS

Y-1. A fresh air heater and defroster must be provided with a minimum output of 57,600 Btu..

Y-2. A minimum 48,000 Btu. air conditioner shall be provided . Location to be inside cab.

Y-3. Black hard rubber mud flaps shall be provided on the rear of the cab front wheels & the rear body wheel wells.

Y-4. Unit shall have 4" reflective white stripe, 3M#980-10, No exceptions, in accordance with NFPA Standards. The letters "911" to be provided in 6" reflective tape to be provided on each rear side of the apparatus.

Y-5. License plate bracket and light shall be furnished and mounted on back of left rear compartment.

Y-6. Spools and rollers to be provided on the lower section of the rear end on each side for cabinet protection.

Z- PAINT

Z-1. Paint to be acrylic urethane red with white cab top down to windows.

Z-2. Entire unit, inside and out, to be painted before final assembly.

Z-3. All surfaces to properly prepared to ensure a high quality, long lasting finish.

Z-4. Stripping & lettering as specified by Lodi Fire Department to include gold leaf lines around compartments and cab. "City Of Lodi Fire Department" on doors and Unit ID on cab sides and roof.

Options:

1. ABS brakes

2. A Motorola Spectre mobile radio shall be provided. The control head shall be mounted to provide easy access by the forward facing passenger (captain).

ITEM	COMPLIANCE YES	NO
GENERAL SCOPE OF THE BID	[ ]	[ ]
BIDDERS RESPONSIBILITY & QUALIFICATIONS	[ ]	[ ]
EXAMINATION OF SPECIFICATIONS	[ ]	[ ]
PRICES & PAYMENTS	[ ]	[ ]
BID EVALUATION	[ ]	[ ]
CONTRACT AWARD	[ ]	[ ]
DISPUTES	[ ]	[ ]
LIQUIDATED DAMAGES	[ ]	[ ]
PRE-AWARD CLARIFICATIONS	[ ]	[ ]
PRECONSTRUCTION CONFERENCE	[ ]	[ ]
INDEMNIFICATION & INSURANCE	[ ]	[ ]
PATENTS & ROYALTIES	[ ]	[ ]
PROGRAM MANAGER	[ ]	[ ]
SUB-CONTRACTS	[ ]	[ ]
FAMILIARITY WITH LAWS	[ ]	[ ]
GENERAL CONSTRUCTION	[ ]	[ ]
SPECIFICATIONS PROPOSAL REQUIREMENTS	[ ]	[ ]
REQUIRED MANUALS	[ ]	[ ]
BLUE PRINTS	[ ]	[ ]

ITEM	COMPLIANCE YES	NO
ON SITE INSPECTIONS	[ ]	[ ]
DELIVERY METHOD	[ ]	[ ]
PERFORMANCE TEST & REQUIREMENTS	[ ]	[ ]
FAILURE TO MEET TESTS	[ ]	[ ]
WARRANTY	[ ]	[ ]
MATERIAL & WORKMANSHIP	[ ]	[ ]
LEASE/PURCHASE OPTIONS	[ ]	[ ]

ITEM	COMPLIANCE YES	NO
A. CHASSIS		
A-1	[ ]	[ ]
A-2	[ ]	[ ]
A-3	[ ]	[ ]
A-4	[ ]	[ ]
A-5	[ ]	[ ]
A-6	[ ]	[ ]
A-7	[ ]	[ ]
A-8	[ ]	[ ]
A-9	[ ]	[ ]
A-10	[ ]	[ ]
A-11	[ ]	[ ]
A-12	[ ]	[ ]
B. FRAME		
B-1	[ ]	[ ]
B-2	[ ]	[ ]
B-3	[ ]	[ ]
B-4	[ ]	[ ]
C. AXLES		
C-1	[ ]	[ ]
C-2	[ ]	[ ]
C-3	[ ]	[ ]
C-4	[ ]	[ ]
D. SUSPENSION		
D-1	[ ]	[ ]
D-2	[ ]	[ ]
E. BRAKES		
E-1	[ ]	[ ]
E-2	[ ]	[ ]
E-3	[ ]	[ ]
E-4	[ ]	[ ]
E-5	[ ]	[ ]
E-6	[ ]	[ ]
F. ENGINE		
F-1	[ ]	[ ]
F-2	[ ]	[ ]

ITEM	COMPLIANCE YES	NO
G. COOLING SYSTEM		
G-1	[ ]	[ ]
G-2	[ ]	[ ]
G 4	[ ]	[ ]
G-5	[ ]	[ ]
G-6	[ ]	[ ]
G-7	[ ]	[ ]
H. EXHAUST SYSTEM		
H-1	[ ]	[ ]
H-2	[ ]	[ ]
H-3	[ ]	[ ]
H-4	[ ]	[ ]
I. AIR CLEANER		
I-1	[ ]	[ ]
I-2	[ ]	[ ]
J. DRIVE TRAIN		
J-1	[ ]	[ ]
J-2	[ ]	[ ]
J-3	[ ]	[ ]
J-4	[ ]	[ ]
K. STEERING		
K-1	[ ]	[ ]
K-2	[ ]	[ ]
L. TIRES & WHEELS		
L-1	[ ]	[ ]
L-2	[ ]	[ ]
M. ELECTRICAL SYSTEM		
M-1	[ ]	[ ]
M-2	[ ]	[ ]
M-3	[ ]	[ ]
M-4	[ ]	[ ]
M-5	[ ]	[ ]
M-6	[ ]	[ ]
M-7	[ ]	[ ]
M-8	[ ]	[ ]
M-9	[ ]	[ ]
M-10	[ ]	[ ]

ITEM	COMPLIANCE YES	NO
M. ELECTRICAL SYSTEM (continued)		
M-11	[ ]	[ ]
M-12	[ ]	[ ]
M-13	[ ]	[ ]
M-14	[ ]	[ ]
M-15	[ ]	[ ]
M-16	[ ]	[ ]
M-17	[ ]	[ ]
M-18	[ ]	[ ]
M-19	[ ]	[ ]
N. LIGHTING		
N-1	[ ]	[ ]
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N-22	[ ]	[ ]
N-23	[ ]	[ ]
O. PUMP		
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O-6	[ ]	[ ]
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O-8	[ ]	[ ]

ITEM	COMPLIANCE YES	NO
P. VALVES AND PLUMBING		
P-1	[ ]	[ ]
P-2	[ ]	[ ]
P-3	[ ]	[ ]
P-4	[ ]	[ ]
P-5	[ ]	[ ]
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P-11	[ ]	[ ]
P-12	[ ]	[ ]
Q. PUMP OPERATORS PANEL		
Q-1	[ ]	[ ]
Q-2	[ ]	[ ]
Q-3	[ ]	[ ]
Q-4	[ ]	[ ]
R. TANK		
R-1	[ ]	[ ]
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R-11	[ ]	[ ]
R-12	[ ]	[ ]
S. APPARATUS BODY CONSTRUCTION		
S-1	[ ]	[ ]
S-2	[ ]	[ ]
S-3	[ ]	[ ]
S-4	[ ]	[ ]
S-5	[ ]	[ ]
S-6	[ ]	[ ]
S-7	[ ]	[ ]
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S-9	[ ]	[ ]

ITEM	COMPLIANCE YES	NO
T. COMPARTMENTS		
T-1	[ ]	[ ]
T-2	[ ]	[ ]
T-3	[ ]	[ ]
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T-16	[ ]	[ ]
U. HANDRAILS		
U-1	[ ]	[ ]
V. HOSE BED		
V-1	[ ]	[ ]
V-2	[ ]	[ ]
V-3	[ ]	[ ]
V-4	[ ]	[ ]
V-5	[ ]	[ ]
V-6	[ ]	[ ]
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V-8	[ ]	[ ]
V-9	[ ]	[ ]
W. AUDIBLE WARNING DEVICES		
W-1	[ ]	[ ]
W-2	[ ]	[ ]
W-3	[ ]	[ ]
W-4	[ ]	[ ]
X. FUEL SYSTEM		
X-1	[ ]	[ ]
X-2	[ ]	[ ]
X-3	[ ]	[ ]
X-4	[ ]	[ ]

ITEM	COMPLIANCE YES	NO
Y. MISCELLANEOUS		
Y-1	[ ]	[ ]
Y-2	[ ]	[ ]
Y-3	[ ]	[ ]
Y-4	[ ]	[ ]
Y-5	[ ]	[ ]
Y-6	[ ]	[ ]
Z. PAINT		
Z-1	[ ]	[ ]
Z-2	[ ]	[ ]
Z-3	[ ]	[ ]
Z-4	[ ]	[ ]